

Translation

PATENT COOPERATION TREATY

PCT/FR2003/002774



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference R8039WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FR2003/002774	International filing date (day/month/year) 19 septembre 2003 (19.09.2003)	Priority date (day/month/year) 20 septembre 2002 (20.09.2002)
International Patent Classification (IPC) or national classification and IPC H01Q 11/08, 1/36, 1/38		
Applicant UNIVERSITE DE RENNES 1		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 16 avril 2004 (16.04.2004)	Date of completion of this report 05 November 2004 (05.11.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR2003/002774

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
pages _____ 1-18 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the claims:
pages _____ 1-19 _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the drawings:
pages _____ 1/8-8/8 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR 03/02774

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	5, 6, 13, 18	YES
	Claims	1-4, 7-12, 14-17, 19	NO
Inventive step (IS)	Claims		YES
	Claims	1-19	NO
Industrial applicability (IA)	Claims	1-19	YES
	Claims		NO

2. Citations and explanations

1. Reference is made to the following documents:

D1: US 6 278 414;

D2: XP 6 016 948 "Broadband tapered printed quadrifilar helical antenna", Louvigné.

2. Claims 10 and 11 are not clear (PCT Article 6).

According to said claims "one of the ends of each of said radiating wires is connected ... to one of the ends of said radiating wire with which said parasitic wire is associated".

For the purpose of the examination report, it has been assumed that the proper wording is as follows:

"one end of each of said parasitic wires is connected ... to one of the ends of said radiating wire with which said parasitic wire is associated".

3. The subject matter of claims 1-4, 7-12, 14-17 and 19 does not comply with the requirement of novelty (PCT Article 33(2)).

3.1 D1 discloses all of the features in claim 1:

a helical antenna including at least one helix (D1: column 1, line 15) consisting of at least two radiating wires (D1: figures 7-11), wherein at least one of said radiating wires is associated with a parasitic wire (D1: figure 11a; column 9, lines 6-18) of which the width is smaller than or equal to that of said radiating wire(s) (D1: figure 11a) in such a way as to broaden the band width of said antenna (D1: column 9, lines 27-29).

3.2 D1 further discloses the features in dependent claims 2-4, 7-17 and 19:

- claims 2, 4 and 8: see figures 7b, 11a and 11b;
- claim 3: see column 4, lines 54-63;
column 9, lines 22-23;
- claim 7: this claim, in its current form, does not contain any additional limitations.
Indeed, all that has to be done in figure 11a is "associate" the radiating and parasitic wires as indicated in the annex;
- claim 9: see figures 7b and 8b;
- claim 10: see figure 8; column 8, lines 55-58;
- claim 11: see figure 11 (capacitive coupling); figure 8 (resistive coupling);
- claim 12: see column 8, lines 43-52;
column 9, lines 19-24;

- claim 14: see figures 9b and 11;
- claim 15: see column 6, lines 60-67;
- claim 16: see figure 8b;
- claim 17: see column 6, lines 36-43;
- claim 19 see column 6, lines 1-6.

4. The additional features in **claims 5, 6, 13 and 18** do not involve an inventive step (PCT Article 33(3)) because they are either routine technical practice or are known from D2:

(a) claim 5: in figure 11a, D1 discloses (cf. also column 9, lines 23-29) that the width of the parasitic wire is smaller than that of the radiating wire in order to broaden the band width of the antenna. Further reducing this ratio is considered to be a routine technical step;

(b) claim 6: the coupling is always optimised;

(c) claim 13: the selection of a capacitive coupling for the coupling between the radiating wire and the parasitic wire does not involve an inventive step;

(d) claim 18: the use of wires of variable width to broaden the band width is known from document D2 (cf. figure 1).

5. It should be noted that document D1, which is particularly relevant, has not been cited in the

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR 03/02774

description in order to indicate the prior art (PCT
Rule 5.1(b)).

PCT

RAPPORT D'EXAMEN PRELIMINAIRE INTERNATIONAL

(article 36 et règle 70 du PCT)

REC'D 0-8 NOV 2004

PCT

Référence du dossier du déposant ou du mandataire	POUR SUITE A DONNER voir la notification de transmission du rapport d'examen préliminaire international (formulaire PCT/PEA/416)	
Demande internationale No. PCT/FR 03/02774	Date du dépôt international (jour/mois/année) 19.09.2003	Date de priorité (jour/mois/année) 20.09.2002
Classification internationale des brevets (CIB) ou à la fois classification nationale et CIB H01Q11/08		

Déposant
UNIVERSITE DE RENNES 1 et al.

1. Le présent rapport d'examen préliminaire international, établi par l'administration chargée de l'examen préliminaire international, est transmis au déposant conformément à l'article 36.



2. Ce RAPPORT comprend 5 feuilles, y compris la présente feuille de couverture.

☒ Il est accompagné d'ANNEXES, c'est-à-dire de feuilles de la description, des revendications ou des dessins qui ont été modifiées et qui servent de base au présent rapport ou de feuilles contenant des rectifications faites auprès de l'administration chargée de l'examen préliminaire international (voir la règle 70.16 et l'instruction 607 des Instructions administratives du PCT).

Ces annexes comprennent 1 feuilles.

3. Le présent rapport contient des indications et les pages correspondantes relatives aux points suivants :

- I ☒ Base de l'opinion
- II ☐ Priorité
- III ☐ Absence de formulation d'opinion quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle
- IV ☐ Absence d'unité de l'invention
- V ☒ Déclaration motivée selon la règle 66.2(a)(ii) quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle; citations et explications à l'appui de cette déclaration
- VI ☐ Certains documents cités
- VII ☐ Irrégularités dans la demande internationale
- VIII ☐ Observations relatives à la demande internationale

Date de présentation de la demande d'examen préliminaire internationale 16.04.2004	Date d'achèvement du présent rapport 05.11.2004
Nom et adresse postale de l'administration chargée de l'examen préliminaire international  Office européen des brevets D-80298 Munich Tél. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Fonctionnaire autorisé Reuss, T N° de téléphone +49 89 2399-7140 

PCT/FR 03/02774

**RAPPORT D'EXAMEN
PRÉLIMINAIRE INTERNATIONAL**

Demande internationale n°

PCT/FR 03/02774

5. ☐ Le présent rapport a été formulé abstraction faite (de certaines) des modifications, qui ont été considérées comme allant au-delà de l'exposé de l'invention tel qu'il a été déposé, comme il est indiqué ci-après (règle 70.2(c)) :

(Toute feuille de remplacement comportant des modifications de cette nature doit être indiquée au point 1 et annexée au présent rapport.)

6. Observations complémentaires, le cas échéant :

V. Déclaration motivée selon l'article 35(2) quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle; citations et explications à l'appui de cette déclaration

1. Déclaration Nouveauté	Oui:	Revendications	5,6,13,18
	Non:	Revendications	1-4,7-12,14-17,19
Activité inventive	Oui:	Revendications	
	Non:	Revendications	1-19
Possibilité d'application industrielle	Oui:	Revendications	1-19
	Non:	Revendications	

2. Citations et explications

voir feuille séparée

Item V.

1. Il est fait référence aux documents suivants :

D1 : US 6 278 414

D2 : XP 6 016 948 "Broadband tapered printed quadrifilar helical antenna",
Louvigné

2. Les revendications 10 et 11 ne sont pas claires (Art. 6 PCT) :
Selon les revendications "une des extrémités de chacun desdits **brins rayonnants** est reliée ... à l'une des extrémités dudit brin rayonnant auquel ledit brin parasite est associé".

Lors de l'examen préliminaire il a été supposé que la formulation correcte est la suivante:

"une extrémité de chacun desdits **brins parasites** est reliée ... à l'une des extrémités dudit brin rayonnant auquel ledit brin parasite est associé".

3. L'objet de des revendications 1-4, 7-12, 14-17 et 19 n'est pas conforme au critère de nouveauté (Art. 33 (2) PCT).

- 3.1 D1 divulgue toutes les caractéristiques de la revendication 1 :

Antenne hélicoïdale comprenant au moins une hélice (D1: col. 1, ligne 15) formée d'au moins deux brins rayonnants (D1: Fig. 7-11), où au moins un desdits brins rayonnants est associé à un brin parasite (D1: Fig. 11a; col. 9, lignes 6-18) de largeur inférieure ou égale audit ou auxdits brins rayonnants (D1: Fig. 11a) de façon à élargir la bande passante de ladite antenne (D1: col. 9, lignes 27-29).

- 3.2 D1 divulgue en plus les caractéristiques des revendications dépendantes 2-4, 7-17 et 19:

- Rev. 2, 4, 8 : Figs. 7b, 11a, 11b;
- Rev. 3 : col. 4, lignes 54-63; col. 9, lignes 22-23;
- Rev. 7 : Dans sa forme actuelle, la revendication n'amène pas de limitation supplémentaire: en effet, il suffit d'effectuer dans la figure 11a "l'association" des brins rayonnants et parasites

**RAPPORT D'EXAMEN
PRELIMINAIRE INTERNATIONAL - FEUILLE SEPARÉE**

Demande internationale n° PCT/FR 03/02774

comme indiqué dans l'annexe;

- Rev. 9 : Figs. 7b, 8b;
- Rev. 10 : Figs. 8; col. 8, lignes 55-58;
- Rev. 11 : Fig. 11 (couplage capacitif); Fig. 8 (couplage résistif);
- Rev. 12 : col. 8, lignes 43-52; col. 9, lignes 19-24;
- Rev. 14 : Figs. 9b, 11;
- Rev. 15 : col. 6, lignes 60-67;
- Rev. 16 : Fig. 8b;
- Rev. 17 : col. 6, lignes 36-43;
- Rev. 19 : col. 6, lignes 1-6.

4. Les caractéristiques additionnelles des **revendications 5, 6, 13 et 18** n'impliquent pas d'activité inventive (Art. 33(3) PCT), puisqu'elles relèvent d'une démarche technique normale ou bien elles sont connues de D2 :

- (a) Revendication 5 : D1 divulgue dans la figure 11a (cf. également col. 9, lignes 23-29), que le brin parasite est d'une largeur inférieure par rapport à la largeur du brin rayonnant pour élargir la bande passante de l'antenne. Diminuer ce rapport encore est considéré une démarche technique normale.
- (b) Revendication 6 : Une optimisation du couplage est toujours effectuée.
- (b) Revendication 13 : Choisir de rendre le couplage entre le brin rayonnant et le brin parasite capacitif n'implique pas une activité inventive.
- (c) Revendication 18 : L'utilisation de brins de largeur variable pour élargir la bande passante est connue du document D2 (cf. Fig. 1).

5. Il est à noter que le document D1 qui est particulièrement pertinent n'est pas cité dans la description, indiquant l'état de la technique (Règle 5.1(b) PCT).

Annexe

"Association" des brins rayonnants et parasites

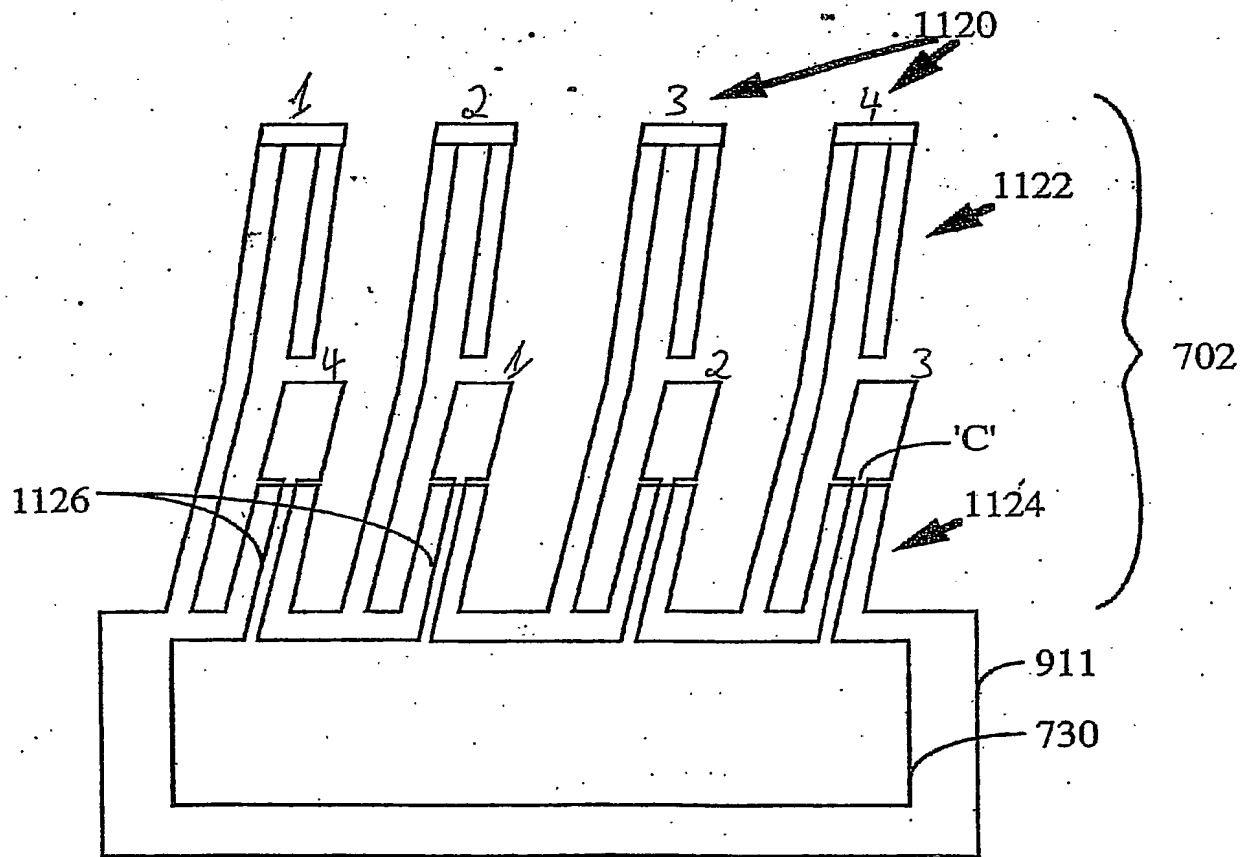


FIG. 11A

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☒ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.